CST-303	: **Data and Computer Communications**	**First Semester**
Text book	: Data and Computer Communications (9th Edition) by William Stallings	
Period	: **45** periods for 15 weeks (3 periods/week) (Lecture + Lab)	

Course Description

The subject is to provide students with the fundamental concepts in computer communications, proceeding from data communications over a data link to transfer of information across local-area networks and wide-area networks. Introduction to Broadband networking concepts, latest broadband networking technologies & protocols. Broadband backbone & access networks, DSL networks, Fiber-to-the-Curb (FTTC) networks, broadband switching architecture & protocols. Traffic management, congestion control, buffering issues, quality of service for broadband networks.

Course Objectives

Upon completing this module, you should be able to:

- describe and justify the OSI Reference Model and the key protocols that govern the Internet.
- program applications and protocols for computer networks.
- illustrate and debate the use and need of cryptographic techniques in nework security. (eg the notion of bandwidth, Shannon's law, etc)

Upon completion of this course, students should be able to understand the operation of LAN/WAN and components, Broadband switching architecture/protocols, Asynchronous Transfer Mode multiplexing, Traffic management, Congestion control, Buffering schemes, Queueing models.

Assessment Plan for the Course

Paper Exam: 60%

Attendance: 10%

Test/ Quiz: 10%

Lab: 10%

Lab Assessment: 10%

Tentative Lecture Plan

No.		Chapter	Page	Description
	Section (1) :	**Data and Computer Communications**		
	Chapter 3	**Data Transmission**	**91-127**	
1.	3.1	Concepts and Terminology	92-103	Explain Concept
2.	3.2	Analog and Digital Data Transmission	103-111	Definition
3.	3.3	Transmission Impairments	111-117	Reject Pg115
4.	3.4	Channel Capacity	117-121	Reject Eg 3.5,3.6,3.7,3.8
	Chapter 4	**Transmission Media**	129-165	
5.	4.1	Guided Transmission Media	130-144	
6.	4.2	Wireless Transmission	144-152	
7.	4.3	Wireless Propagation	152-157	
8.	4.4	Line of Sight Transmission	157-161	
	Chapter 6	**Digital Data Communication Techniques**	**208-235**	
9.	6.1	Asynchronous and Synchronous Transmission	210-214	
10.	6.3	Error Detection	214-224	
11.	6.5	Line Configurations	230-231	
	Chapter 7	**Data Link Control Protocols**	**236-257**	
12.	7.1	Flow Control	236-244	Figure Only
13.	7.2	Error Control	245-250	Figure Only
14.	7.3	High-Level Data Link Control (HDLC)	251-257	Detail
	Chapter 8	**Multiplexing**	**470-502**	